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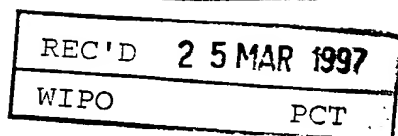
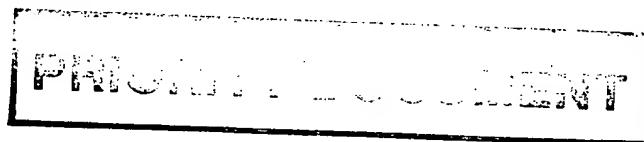The Patent Office
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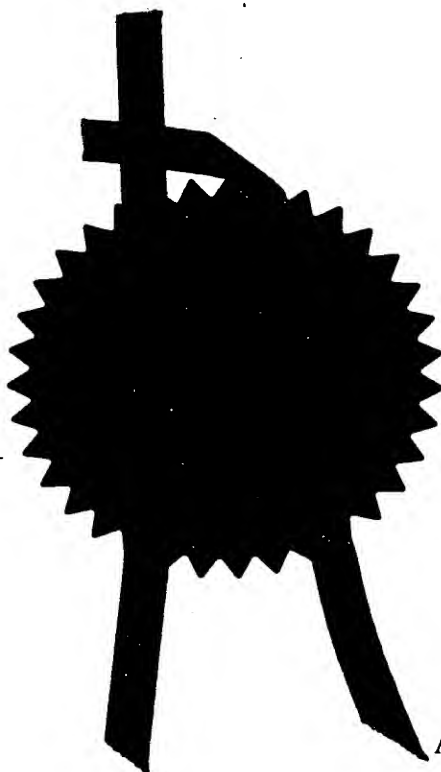
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Dated   10   March   1997

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14FEB96 E174082-1 C03048
P01/7700 25.00

Juest for grant of a patent

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12 FEB 1996

LONDON

The Patent Office

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1. Your reference

A25020

2. Patent application number
(The Patent Office will fill in this part)

9602780.0

F12 FEB 1996

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

BRITISH TELECOMMUNICATIONS public limited company
81 NEWGATE STREET, LONDON, EC1A 7AJ, ENGLAND

Patents ADP number *(if you know it)*

1867002

If the applicant is a corporate body, give the country/state of its incorporation

UNITED KINGDOM

4. Title of the invention

5. Name of your agent *(if you have one)*

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

DUTTON, ERICA LINDLEY GRAHAM

BT GROUP LEGAL SERVICES
INTELLECTUAL PROPERTY DEPARTMENT
8TH FLOOR, 120 HOLBORN
LONDON, EC1N 2TE

Patents ADP number *(if you know it)*

5950951001

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*
   a) *any applicant named in part 3 is not an inventor, or*
   b) *there is an inventor who is not named as an applicant, or*
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    Claim(s) 4

    Abstract $-$

    Drawing(s) 3 𝒲

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    Statement of inventorship and right
    to grant of a patent *(Patents Form 7/77)*

    Request for preliminary examination
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    Request for substantive examination
    (Patents Form 10/77)

    Any other documents
    (please specify)

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11.   I/We request the grant of a patent on the basis of this application.

     E.L.D.DUTTON,   Signature _____   Date   9 FEBRUARY 1996

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12. Name and daytime telephone number of
    person to contact in the United Kingdom   0171 492 8113

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1

BUSINESS PROCESS PROVISION AND ENACTMENT

The present invention relates to provisioning of services in a business environment and finds particular application for the management of business process enactment.

Managers in organisations make informed decisions based on a combination of judgement and information from marketing, sales, research, development, manufacturing, finance and legal departments. Ideally, all relevant information should be brought together before judgement is exercised. Requesting pertinent and consistent information across a large company is a complex and time consuming process. Changes to information made in one department can have repercussions throughout a company often invalidating previous decisions.

For these reasons it would be desirable to provide systems and methods which, to some extent at least, manage both the collection of pertinent information and the tasks and resources which use this information.

In accordance with one aspect, the present invention provides a service provisioning system for business process enactment, said system comprising:

an input connected to a distributed computing environment for receiving a service request from an entity;

a response output connected to said distributed computing environment for providing a response to the entity;

processing means to process the service request and provide a response thereto; and

means to access an up-datable data store for storing parameter(s) indicative of the available capacity of the system to provide the service,

wherein the processing means is adapted to process a service request by accessing one or more parameters in the data store, processing the request using the one or more parameters, and producing a response at the output, which response is selected from indications that

a)   sufficient capacity is available to provide the service;

b)   insufficient capacity is available to provide the service; and

c)   sufficient capacity is available to provide the service if modified, together with associated modifications.

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It will be understood that the term "entity" as used here means a piece of equipment which can communicate over the distributed computing environment. It will in practice usually comprise at least an input and an output and, often, some means for delivering one or more of the services to be provided. It might be for

5   instance a work station, personal computer or a computing network node.

In embodiments of the invention, the system further comprises a control output connected by said distributed computing environment to one or more tasks and/or resources required to provide the service.

The system may also comprise a data input connected by said distributed

10   computing environment to one or more tasks and/or resources required to provide the service, for receiving data output by the tasks and/or processes, and data processing means to generate said parameters from said data. Alternatively, it may be that the data output by the tasks and/or processes already comprises said parameters.

15   This system aims to enhance the way a large company runs its business by improving the way it accesses, uses and adds value to its vast quantities of information. The metaphor of 'concurrent engineering' suggests that the best way to achieve a business activity is to bring together as early as possible all the necessary information, resources and skills that are needed to execute that

20   activity.

An advantage of this system is that a decision to provide a service is based on stored parameters and not on real-time or near real-time information of the resources required to provide the service: there is no need to perform a detailed analysis of the resources available to the system before a decision is

25   reached. The system bases its decisions on an estimation of the capacity of the system to provide a service at the requested time.

The stored parameters might include the average time a service is expected to take, the expected cost of performing tasks to provide a service and/or the amount of work already being done by the system. Other information

30   can also be used to determine on what grounds a service will be provided, for example past experience of any dealings with the same entity. Once a system has agreed to provide a service, it can schedule the use of its resources to support the delivery of that service.

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Although the lack of a detailed resource analysis during provisioning does increase the risk that once a service has been negotiated for it might not be possible to complete it, such failure can be dealt with acceptably, as described in more detail below.

5   The processing means is typically adapted to receive data from the resource(s) for use in updating the data store. Such data might comprise a measure of capability of the system on the basis of the past performance of the resources. For example, each time a service has been provided by the system, information about how well the resources performed may be used to adjust the

10   parameter(s). Performance information might include actual cost data and actual time taken to provide a required output. The information might also include task current status information which is readily available to the system.

In some embodiments, the system comprises a request output connected to the distributed computing environment for requesting a component service from

15   another entity. A component service, or sub-service, is one which the system requires in order to provide its service. For example, if the service requested is to open a new business account, a sub-service might be the task of checking the financial viability of the prospective account holder. This sub-service would typically be provided by an entity which could be another system, or maybe even a

20   human operator.

In some embodiments, the system comprises means for scheduling resource(s) to provide a service. Preferably, in this case, the processing means is adapted, in response to a failure by the scheduling means to schedule a resource, in time to complete a service, to: re-schedule the task/service; transmit a message

25   to the entity that the originally requested service can only be provided under different conditions; re-locate the service with another service providing entity; or indicate to the entity that the service cannot be provided. These possible actions give the system flexibility to deal with problems which might arise with the provision of a service.

30   The above-mentioned steps for recovery can be similarly applied to the case where a service fails during operation. A resource might become unavailable, for example, due to a break in communications.

In general therefore, the system may further comprise means for monitoring for failure, such as of scheduling means. In order to act on detection of a failure, the system may then be adapted to initiate a modified response output in respect of a relevant service request. It may further be adapted to store service

5 requests and to be triggered on detection of failure to identify and access the relevant stored process request, to reprocess it using one or more modified parameters from the updatable data store, and to provide a modified response output.

In embodiments of the invention, the system is arranged to provide more

10 than one instance of a service, and/or of a negotiation for a service, to one or more requesting entities concurrently. An advantage of this aspect is that the system is available for use by plural service requesters. In this respect, preferably, at least some resources as well can support multiple resource requests concurrently.

In accordance with another aspect, the present invention provides a

15 service provisioning system, said system comprising means for negotiating with an entity, in response to a request from said entity, to provide a service and means for accessing one or more resources available for use by the system to provide a service, said negotiating means including data about said system relating to a measure of the current system capacity to provide a service, and being arranged to

20 negotiate substantially on the basis of said data to provide a service in response to a request.

In accordance with a further aspect, the present invention provides a method of business process enactment, said method being implemented in a distributed computing environment including at least one service provider and at

25 least one service requester, said service provider comprising an input to receive a request from the or any service requester within said environment, an output to provide a response to said service requester, processing means to process said request to determine the nature of said response, means to access an up-datable data store for storing parameters indicative of the present capacity of the service

30 provider to provide the service, and a control output to one or more resources in the environment available for use by said service provider, wherein the processing means determines the nature of said response on the basis of the data stored in the data store.